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MACCORD MASON PLLC  
300 N. GREENE STREET, SUITE 1600  
P. O. BOX 2974  
GREENSBORO, NC 27402

EXAMINER
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IRSHADULLAH, M

ART UNIT	PAPER NUMBER
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3623

DATE MAILED: 09/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/731,035

Applicant(s)

KARRO ET AL.

Examiner

M. Irshadullah

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*Meer*

— The MAILING DATE of this communication appears on the cover sheet with the correspondence address —

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 06 December 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 9/3/02, 4/9/01.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Claim Objections***

1. Claims 1 are objected to because of the following informalities:

Claim 1 sub element of element d: receiving from voters: please amend last sub-element a) to c).

Appropriate correction is appreciably required.

- 1a. The numbering of claims is not in accordance with 37 CFR 1.126 which requires the original numbering of the claims to be preserved throughout the prosecution. When claims are canceled, the remaining claims must not be renumbered. When new claims are presented, they must be numbered consecutively beginning with the number next following the highest numbered claims previously presented (whether entered or not).

Misnumbered claims 10-15 have been renumbered to 11-16.

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-8 and 10-16 are rejected under 35 U.S.C. 102(e) as being anticipated by Challener et al (US Patent 6,081,793).

Challener et al disclose:

Claim 1. A method of holding an election comprising:

a) enabling voters to register with a registrar facility including providing encryption keys to registered voters and storing the encryption key with an authenticator facility (Fig. 1A {201 to 203}, col. 2, line 64 through col. 3, line 2 and Fig. 2A described col. 3, lines 10-23, wherein cited voter undergoing registration indicating "enabling voters registration with registration means or facility 203" and issuing smart card comprising voters public and private keys indicating "issuing or providing encryption keys" and passing said information including said encryption keys in smart to authenticator server 225, col. 3, lines 30-31, pointing to said authentication server or facility "storing encryption keys"),

b) distributing ballots having unique ballot ID's to requesting voters (Fig. 2B {61}, col. 3, lines 23-26, wherein cited ballot dispensing system indicating reference's teaching means for "dispensing or distributing ballot to voters" and said ballot having a number or ID, col. 7, lines 15-17),

c) receiving ballots having voter choices on them and encrypted using voters encryption keys (Col. 7, lines 19-27, col. 8, lines 10-19, wherein cited voter's completing ballot by filling in dots at the polling place and voter's depositing it indicating "receiving ballots at the polling and voter encrypting it using public key, col. 8, lines 10-15),

d) receiving from voters (Col. 3, lines 3031, wherein passing above discussed voter information in smart card to authentication server indicating "receiving information from voters":

d1) ballot ID, encrypted vote information and, voter ID at an authenticator facility Fig. 7A {367-379}, col. 7, lines 50-60, wherein cited smart card comprising ballot ID, voter's PIN, name etc., which is encrypted and sent to authentication server or facility),

d2) indications that votes have been cast with a ballots having indicated ballot ID's at a distributor facility (Fig. 7B, col. 8, lines 19-22, wherein journal server examining cryptolope {comprising completed ballot, ballot id etc., col. 8, lines 10-18} sent by voter for any tempering indicating voter's casting "ballot having said ID" and ballot has to deposit or cast his ballot at a polling location, physical or electronic (col. 7, lines 36-37 and col. 8, 17-18), including issuing or distributing location or facility), and

d3) an indication that the voter has voted at a registrar facility (As discussed above voter has to deposit or cast his ballot at a polling location including registration or registrar facility 203, Fig. 1),

e) authenticating the voter at the authenticator facility and passing authenticated votes and the ballot ID to a counter facility (Col. 7, line 38 through col. 8, line 52, wherein authentication server examining authenticity of the voter, col. 7, line 58 through col. 8, line 4, and results server adding the ballot in election results indicating

reference's teaching the claimed limitation. Moreover, reference teaches ballot counter, Figs. 9D and 9E).

Claim 2. A method as claimed in claim 1 further comprising:

a) decrypting votes at the counter facility and tallying a number of votes (Col. 11, lines 33-36, wherein ballot counter decrypting indicating reference's teaching "decrypting votes at the counter facility" and comparing old and new vote pointing to claimed "tallying" votes),

b) publishing a list containing encrypted votes and ballot ID's at the authenticator facility (Col. 8, lines 50-52, wherein cited results server tabulating results indicating said server "composing or publishing results in tabular or list format" and said table or list comprising above discussed ballots having votes and IDs encrypted by above discussed authenticating server or facility),

c) publishing a list containing encrypted votes and ballot ID's at the counter facility (Col. 10, lines 6-50, wherein cited election tabulation indicating "composing or publishing table or list at ballot counter or counter facility"),

d) publishing a list containing voter ID's of cast ballots at the authenticator facility (A user would use above discussed tabular composition or publishing function for claimed purpose),

e) examining the list containing voter ID's of cast ballots at the registrar facility to confirm that only registered voters voted (Col. 7, line 38 through col. 8, line 1, wherein cited comparing voter's PIN, authentication server's examining voter identification

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information etc., indicating reference's teaching "comparing, examining" functions and a user would use the same for claimed purpose)

f) verifying at a verifier facility that the list containing encrypted votes and ballot ID's published at the authenticator facility is identical to the list containing encrypted votes and ballot ID's published at the counter facility (Above discussed comparing and examining indicating "verifying" and a user would use the same for claimed purpose),

g) confirming at the verifier facility from the list containing encrypted votes and ballot ID's published at the authenticator facility and a decryption table the results published by the counter facility Col. 8, lines 1-2, wherein cited finding identification authentic indicating reference's teaching "confirming" function and a user would use the same for claimed purpose),

h) examining at the distributor facility the list containing encrypted votes and ballot ID's published at the authenticator facility and the list containing encrypted votes and ballot ID's published at the counter facility to ensure that only legitimate ballots appear (See discussion about examining above and user would use the same for claimed purpose), and

i) releasing the election results at the counter facility (Inherent, since issuing or releasing results is an end of holding elections and above discussed ballot counter would function as results issuing or releasing entity or facility).

Claim 3. A method as claimed in claim 1 wherein at least one of the distributing and receiving steps includes transmitting information over the Internet (Fig. 1 {Internet}).

Claim 4. A method as claimed in claim 1 wherein distributing ballots includes distributing a number of ballots from an inventory of ballots that has more members than there are registered voters (Inherent, since it is an only essential step).

Claim 5. A method as claimed in claim 1 wherein distributing ballots includes distributing a ballot having a ballot number, and a matching pair made up of plain-text versions of ballot choices and encrypted versions of ballot choices (Inherent, since as discussed above, ballots have ballot numbers and requisite textual description of candidates, issues etc.).

Claim 6. A method as claimed in claim 5 wherein the encrypted version is encrypted using an encryption key unique to the ballot (Col. 3, lines 11-59, wherein cited public and private encryption keys are for specific purpose and balloting event, hence are unique).

Claim 7. A method as claimed in claim 5 wherein the ballot choices include ballot choices in municipal and national elections (Col. 1, lines 11-15, wherein cited voters electing local, state, federal officials indicating claimed "ballot choices").



Claim 8. A method as claimed in claim 2 wherein the acts of publishing include publishing to the general public (Inherent, when the balloting is for public officials, above discussed composing or publishing relating to common or general population or public).

Claim 10. An election apparatus comprising:

a) a network of data handling devices configured to hold an election comprising a data handling device enabling voters to register with a registrar facility including providing encryption keys to registered voters and storing the encryption key with an authenticator facility (Fig. 1C, col. 4, line 44 through col. 5, line 50, wherein LANs 110, 132 and Internet representing networking means and computers 112, 130, 118, databases 114, 120, printers 116 etc., representing information or data manipulating or handling machines or devices and see discussion of Applicant's claim 1a) above)

b) a data handling device distributing ballots having unique ballot ID's to requesting voters (See discussion about data handling devices above together Applicant's claim 1b) above),

c) a data handling device receiving ballots having voter choices on them and encrypted using voters encryption keys (See discussion about data handling devices above together Applicant's claim 1c) above),

d) data handling devices configured as authenticator, distributor and registrar facilities enabled to receive from voters (See discussion about data handling devices above together Applicant's claim 1d) above).

d1) ballot ID, encrypted vote information and, voter ID at the authenticator facility (See discussion of Applicant's claim 1d1) above),

d2) indications that votes have been cast with a ballots having indicated ballot ID's at the distributor facility (See discussion of Applicant's claim 1d2) above), and

d3) an indication that the voter has voted at the registrar facility (See discussion of Applicant's claim 1d3) above),

e) to authenticate the voter at the authenticator facility and passing authenticated votes and the ballot ID to a data handling device configured as a counter facility (See discussion of Applicant's claim 1e) above).

Claim 11. An election apparatus as claimed in claim 10 wherein at least two of the data handling devices communicate information to one another over the Internet (Fig. 1C 112 communicating with 118 or 130 etc.).

Claim 12. An election apparatus as claimed in claim 10 wherein the data handling device that distributes ballots distributes a number of ballots from an inventory of ballots that has more members than there are registered voters (See discussion of Applicant's claim 4 above).

Claim 13. An election apparatus as claimed in claim 10 wherein the data handling device that distributes ballots distributes a ballot having a ballot number, and a

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matching, pair made up of plain-text versions of ballot choices and encrypted versions of ballot choices (See discussion of Applicant's claim 5 above).

Claim 14. An election apparatus as claimed in claim 12 wherein the encrypted version is encrypted using an encryption key unique to the ballot (See discussion of Applicant's claim 6 above).

Claim 15. An election apparatus as claimed in claim 12 wherein the ballot choices include ballot choices in municipal and national elections (See discussion of Applicant's claim 7 above).

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 9 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Challener et al and well known practice in the art.

In the following claim:

Claims 9 and 16. A method/apparatus as claimed in claims 1/10 wherein passing authenticated votes includes passing data through a firewall.

Challener et al do not teach the claimed feature.

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However, use of firewall is practiced so long before Applicant's invention, that a user would consider its use as inherent or at least would have been motivated to advantageously use it at the time of instant invention (Please see enclosed document entitled Network Firewalls by Steven M. Bellovin and William R. Cheswick, IEEE Communication Magazine, September 1994).

It would have been obvious to one ordinary skill in the relevant art at the time of instant invention to incorporate well known and practiced firewall into Challenger et al's invention thereby adding another means of security measure to the system.

### ***Conclusion***

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

A) McClure et al., US Patent 6,688,517 B1. Electronic Voting System.

B) Davis et al., US Patent 6,550,675 B2. Direct Vote Recording System.

C) McClure et al., US patent 6,250,548 B1. Electronic Voting System.

D) West et al., US Patent 6,175,833. System And Method For Interactive Live Voting With Tallies For Updating Voting Results.


E) Davis et al., US Patent 5,583,329. Direct Recording Electronic Voting Machine And Voting Process.


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7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to M. Irshadullah whose telephone number is 703-308-6683. The examiner can normally be reached on 10:00 a.m. to 6:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tariq Hafiz can be reached on 703-305-9643. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
M. Irshadullah  
September 01, 2004

  
TARIQ R. HAFIZ  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 3600